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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,365	12/09/2003	Kenneth Boyd	81044284	1364

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EXAMINER	
JONES, HUGH M	

ART UNIT	PAPER NUMBER
2128	

MAIL DATE	DELIVERY MODE
12/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/707,365	BOYD ET AL.	
	Examiner	Art Unit	
	Hugh Jones	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3, 7-12, 16-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7-12 and 16-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-3, 7-12, 16-29 of U.S. Application 10/707,365 filed 12/9/2003 are pending.

Claim Interpretation

2. Some claims call for a "controller". In so far as the claims are directed to a computer simulation, it is unclear what is being "controlled" other than the simulation itself. The claims are so interpreted. Applicants have not offered another interpretation.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

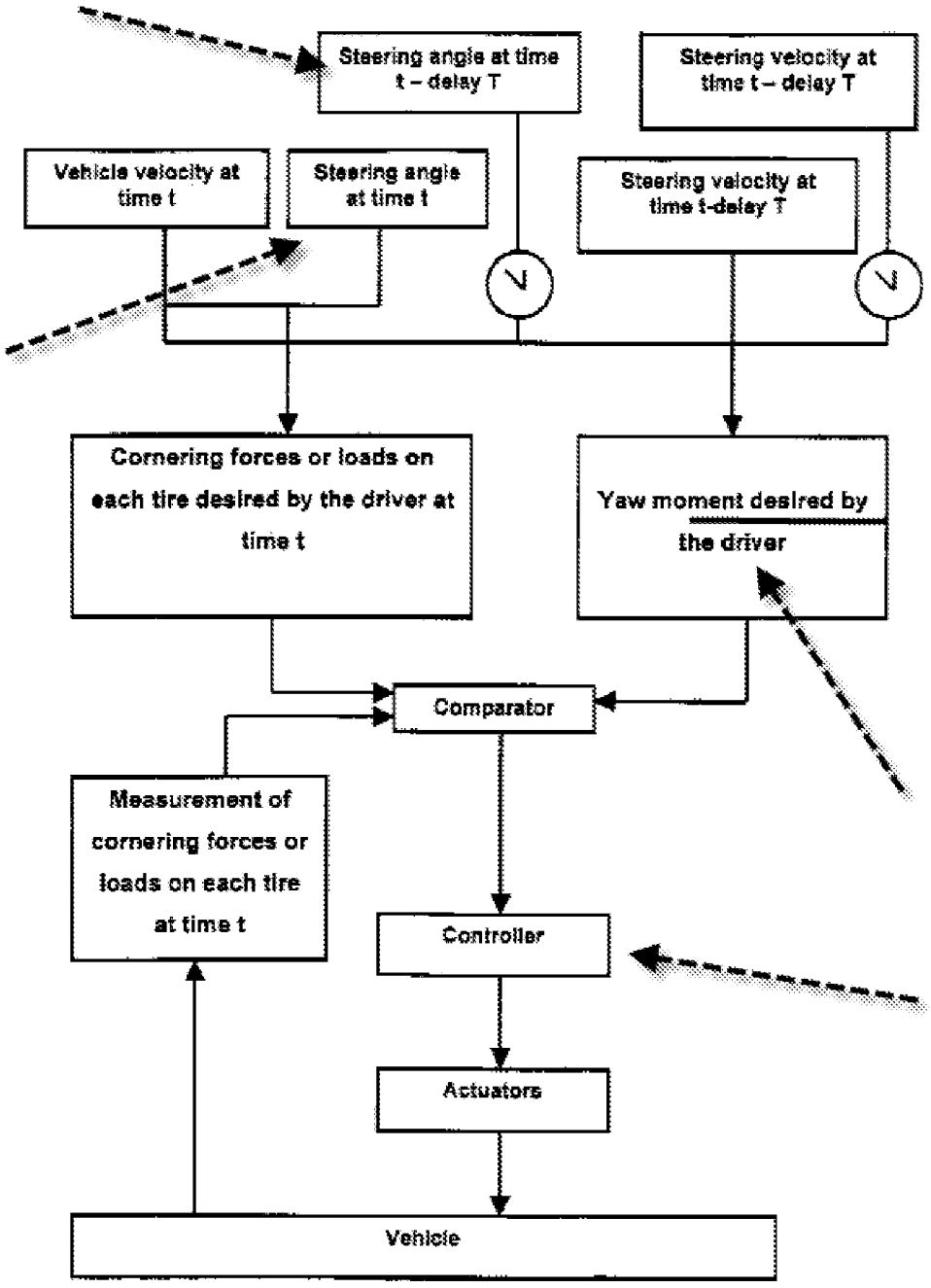
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-3, 7-12, 16-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pallot.

6. Pallot discloses control, modeling and simulation of over- and understeering including initial and subsequent wheel angles, "look ahead" for the driver, and which is continuously updated over time. See fig. 1, and corresponding text (col. 10, line 3 to col.

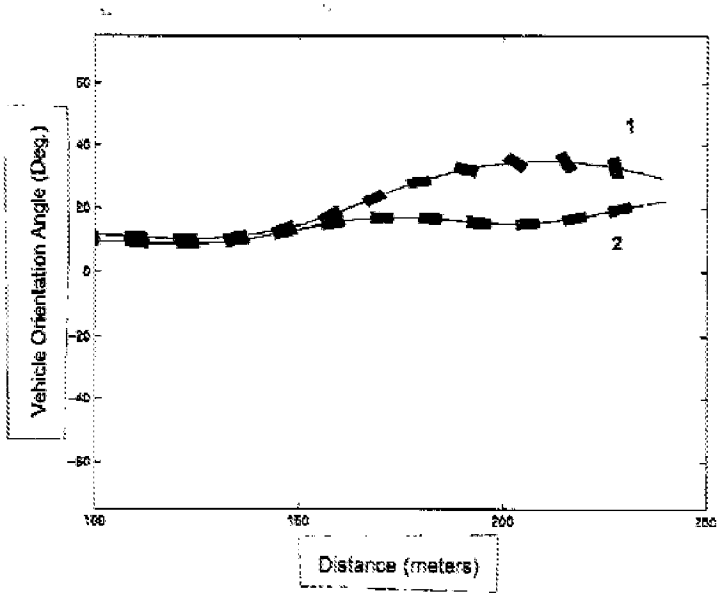
16, line 33. Simulations are described on col. 16, line 37 to col. 18, line 53. The system in fig. 1 is called a “simulation” system; however, it functionally produces the same results (hence the 103).

Fig 1



Note fig. 11:

Figure 11



See col. 16:

A simulation of the dynamic behavior of a vehicle under typical maneuvers is presented with the aid of the following figures. The simulation model that is used is a four-wheeled model with 7 degrees of freedom, enabling the equilibrium of the vehicle to be expressed in terms of yaw, pitch, roll and rotation of the four wheels. The four simulations presented here relate to a vehicle whose characteristics are those of a Volkswagen Golf car travelling at a speed of 90 km/h.

In the first simulation (FIGS. **5***a–c*, **6***a–d*, and **7***a–d*), a sinusoidal pulse of frequency 0.5 Hz of increasing amplitude and on a wet surface is plotted as a steering wheel instruction. This maneuver leads to the loss of control of the vehicle. In all the figures illustrating tire cornering forces (Yp), the axle cornering forces (Y_F, Y_R), the loads (Zp) or yaw moments (Mz) the continuous curves, denoted by "A", represent the actual values, while the dotted curves, denoted by "D", represent the values desired by the driver.

Col. 17:

In the second simulation (FIGS. 8*a*–*c*, 9*a*–*d*, 10*a*–*d*, 11 and 12) it is shown how a modification of the front/rear anti-rolling distribution, controlled as explained above, enables the path of the vehicle to be stabilized. The maneuver is identical to the previous maneuver (steering command in the form of an increasing sinusoidal curve on a wet surface at 90 km/h). As soon as excessive yaw forces are detected, the anti-rolling device is reinforced at the front of the vehicle and is reduced by the same amount at the rear so as to make the vehicle stable as quickly as possible and to utilize in the best possible way the gripping potential of the four tires. The saturation of the cornering forces is better controlled and permits smaller phase differences, which means that yaw moments are better handled and vehicle body changes are more readily identified. To reiterate, in each case the reference "A" represents the actual forces (continuous curve) and the reference "D" refers to the instruction expressed by the proposed method (dotted curve).

See Col. 18:

The fourth simulation (FIGS. **16***a–c*, **17***a–d*, **18***a–d*, **19** and **20**) shows how a modification of the front/rear anti-rolling distribution, controlled as explained hereinbefore, enables the path of the vehicle to be stabilized. In each case the reference "A" represents the actual forces (continuous line) and the reference "D" refers to the instruction expressed by the proposed method (dotted line). The maneuver is identical to the preceding maneuver (avoidance maneuver on a wet surface at 90 km/hour). As soon as excessive yaw forces are detected the anti-roll device is reinforced at the front of the vehicle and decreased by the same amount at the rear of the vehicle so as to stabilize the vehicle as quickly as possible and to utilize in the best possible way the gripping potential of the four tires. The saturation of the cornering forces is handled more effectively and permits smaller phase differences, which means that yaw moments are better controlled and movements of the vehicle body are more easily identified. By means of the anti-roll dynamic distribution the system reduces the delay between the driver's instructions to exert the necessary forces and the reaction of the vehicle, and avoids the swerving that is observed in the absence of the system. FIGS. **16***a*, **16***b*, and **16***c* show the actual and desired cornering forces of the front axle, rear axle, and the yaw moment of the vehicle. FIGS. **17***a*, **17***b*, **17***c*, and **17***d* show the actual and desired vertical loads Zp on the four tires. FIGS. **18***a*, **18***b*, **18***c*, and **18***d* show the actual and desired lateral cornering forces Yp on the four tires.

Response to Arguments

7. Applicant's arguments filed 9/22/2008 have been fully considered. Applicants are thanked for showing support in the specification for the amendment of 1/22/2008.

8. Applicants argue (pg. 14):

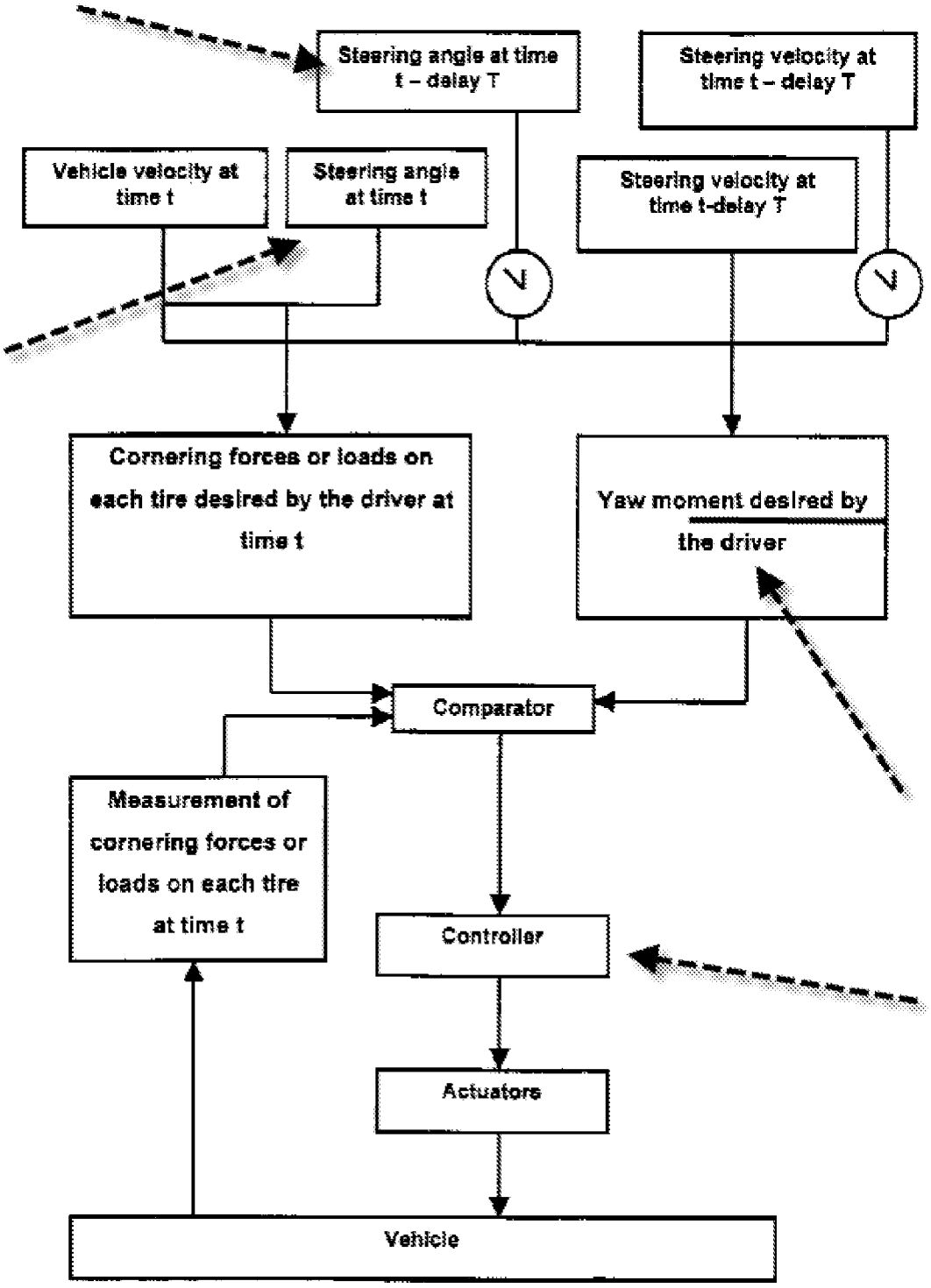
Regarding independent claim 1 as amended, Applicants respectfully aver that Pallot neither teaches nor suggests limitation (d) in claim 1. (Applicants' Application, see specification paragraphs 0008-0009 and 0026-0030 and also boxes 84 and 88 in Figure 4.) In view of such, Applicants further aver that independent claim 1 is not obvious in view of Pallot. Therefore, Applicants respectfully request that Examiner's rejection of claim 1 under 35 U.S.C. § 103(a) be withdrawn. Furthermore, since claims 2, 3, and 7-11 are dependent on independent claim 1, Applicants also request that Examiner's rejections of claims 2, 3, and 7-11 under 35 U.S.C. § 103(a) be withdrawn as well.

9. Applicants have not explained the patentable distinction, and the argument constitutes mere allegation. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the cited portions of the specification) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In any case, limitation "d" recites:

> (d) when said vehicle computer model is determined to be understeering, operate said vehicle computer model with said initial steering wheel angle until a new steering wheel angle is determined such that said plowing or slipping substantially forward is thereby reduced;

Pallot discloses (col. 8, lines 35 to col. 9, line 8 that tires reaching 'saturation' cause over and under-steering (depending upon whether the front or rear tires become saturated) and discloses a corrective mechanism (fig. 1) to compensate:

Fig 1


Steering angle at time t – delay T
Steering velocity at time t – delay T
Vehicle velocity at time t
Steering angle at time t
Steering velocity at time t-delay T
Cornering forces or loads on each tire desired by the driver at time t
Yaw moment desired by the driver
Comparator
Measurement of cornering forces or loads on each tire at time t
Controller
Actuators
Vehicle

10. Applicants argue (pg. 10):

> In addition, regarding independent claim 12 as amended, Applicants respectfully aver that Pallot neither teaches nor suggests method step (e) in claim 12. (Applicants' Application, see specification paragraphs 0008-0009 and 0028-0030 and also boxes 84 and 88 in Figure 4.) In view of such, Applicants further aver that independent claim 12 is not obvious in view of Pallot. Therefore, Applicants respectfully request that Examiner's rejection of claim 12 under 35 U.S.C. § 103(a) be withdrawn. Furthermore, since claims 16-20 are dependent on independent claim 12, Applicants also request that Examiner's rejections of claims 16-20 under 35 U.S.C. § 103(a) be withdrawn as well.

See response above. This also applies to Applicant's arguments regarding claim 21.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hugh Jones whose telephone number is (571) 272-3781. The examiner can normally be reached on M-Th.